

Bloodletting: a history as old as medicine itself

Bloodletting is one of the oldest medical practices, dating back to ancient cultures, including the Aztecs and Egyptians. The typical purpose was to cure a person suffering from infirmity. The patient was pierced or cut and drained of several ounces of blood until they fainted.

- Greek physician Galen of Pergamon discovered that arteries contained blood, not air, and thought the balance of the four humours (blood, phlegm, black bile and yellow bile) was the source of health or illness. When balanced, the four humours resulted in health, but imbalance caused illness, and doctors believed bloodletting facilitated a cure.
- Mapping out the blood vessels of the body, Galen would cut his patients in different areas, depending on what condition he wanted to treat (eg the right hand would be cut and drained in order to treat liver problems).
- Bloodletting was prominent in the early days of some of the world's most practised religions. Judaism. Christianity and Islam included rules for days on which bloodletting could take place.
- Bloodletting, also known as venesection, survived into the first part of the 20th century and was recommended in a 1923 edition of *The Principles and Practice of Medicine*.

Bloodletting methods

During the early days, there were four main bloodletting methods:

- Use of leeches in 19th century medicine to drain blood from a patient. In the 1830s, France imported approximately 40 million leeches and Francois-Joseph-Victor Broussais, a French physician, would reportedly treat patients with as many as 50 leeches at a time.
- Arteriotomy, where the arteries in the temple would be punctured and bled.
- Phlebotomy (also known as "breathing a vein"), where a large external vein would be cut in order to draw blood.
- Scarification, involving one of a varied set of tools made for the purpose of piercing blood vessels (eg spring-loaded lancets and a scarificator).

Continuing into the Middle Ages, the procedure became the role of barbers. Their poles are a leftover tradition dating back to the days of bloodletting. The swirling red line represents blood, the white represents the tourniquet, and the pole represents the stick the patient would squeeze in their hand to dilate the veins.



From left: a blood bowl, leeches, a scarificator and a fleam.
(Image from Mutter Museum's YouTube page).

Bloodletting tools

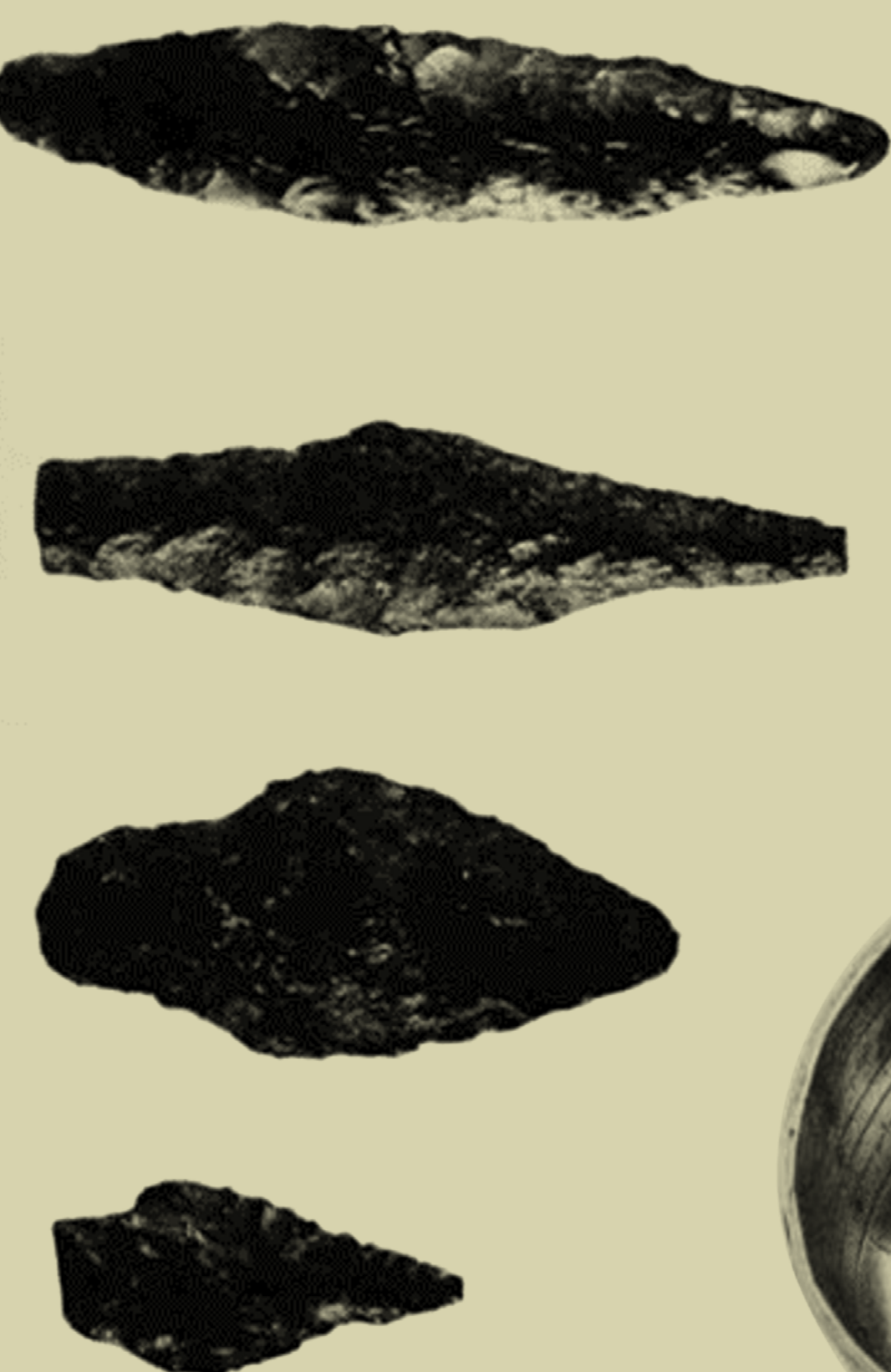
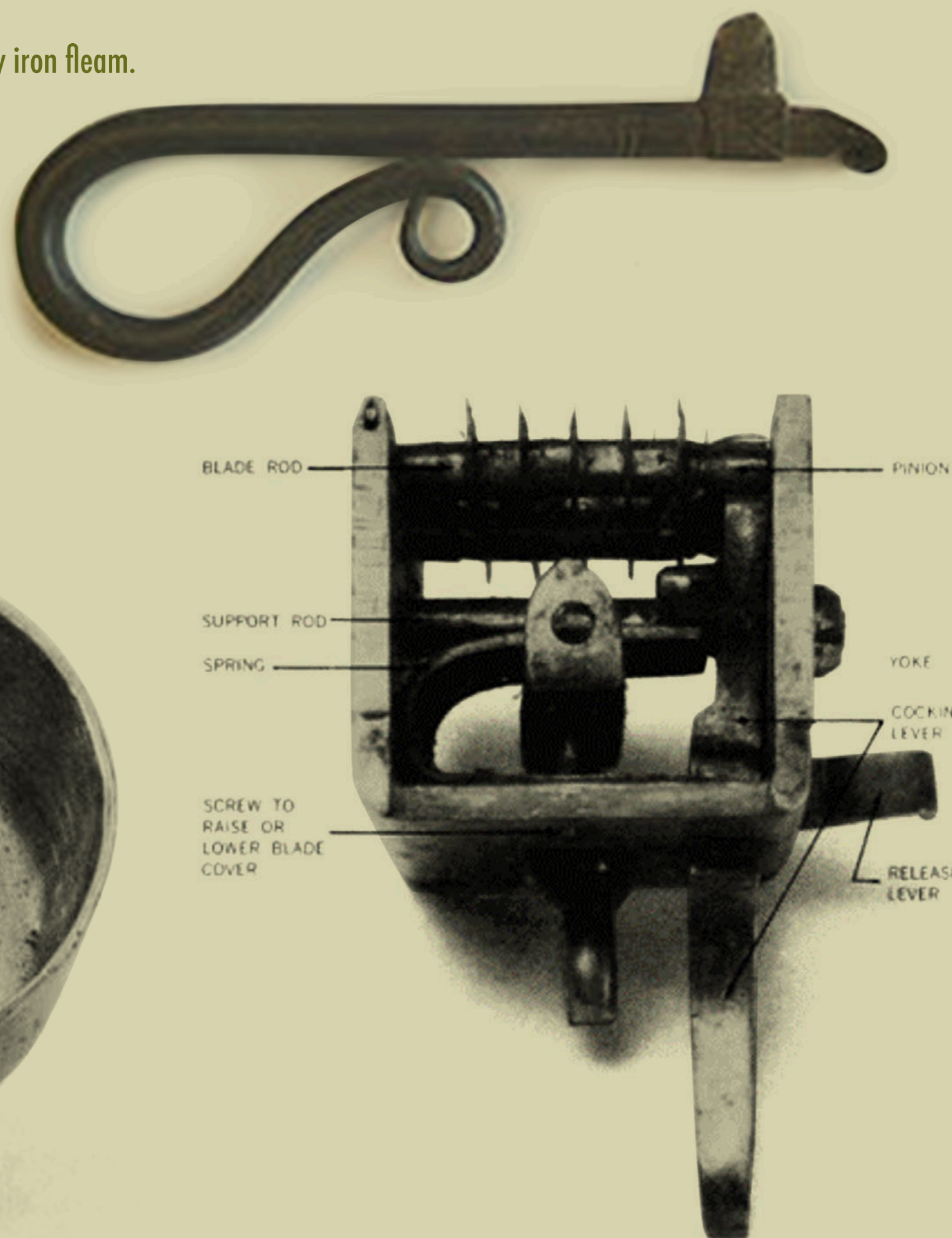
Scarificator A circular, multi-bladed, spring-loaded device.

Lancet The earliest bloodletters used sharpened pieces of wood or stone to "breath a vein". Many steel lancets with flat ebony or ivory handles still exist today.

The fleam A device comprising one or more blades, of various sizes, at right angles to the handle. The most common form is a brass case containing two or three steel blades.

- They succeeded the early use of fish teeth, sharpened stones, and thorns used to penetrate blood vessels.
- The earliest known examples are made of bronze with a myrtle-leaf shaped blade.
- In the 17th and 18th centuries, the German Fliete and French flamettes were developed to what are now known as fleams.
- These triangular-shaped blades were designed to be placed over the vein (most commonly the jugular or saphenous) and struck with a fleam stick. Ideally, this would result in rapid penetration of the vein with minimal risk to the operator and minimal dissection of the subcutaneous tissues – important in minimising the formation of a haematoma.
- Once the desired blood was drained from the patient, the operator would place a pin through the edges of the incision.
- The general approach was to open the skin over a bleeding bowl, which collected the blood.
- The fleam is represented in several coats of arms; for example, the Royal College of Surgeons in Ireland and the Royal Air Force Institute of Pathology and Tropical Medicine.

Early iron fleam.



Flint lancets used by native doctors in Alaska, 1880s. (Anthropology Catalogue 127758; SI photo 73-4208). Bloodletting Instruments in the National Museum of History and Technology Author: Audrey Davis, Toby Appel (July 7, 2010, EBook #33102)



Bleeding bowl with graduations to measure the amount of blood, c. 1740.

Interior of square scarificator. (NMHT 152130 [M-4771]; SI photo 76-9111). Bloodletting Instruments in the National Museum of History and Technology.



Ancient Greek painting on a vase, showing a physician (iatros) bleeding a patient. (The Peytel Arybalos, 480–470 BC, Louvre, Dpt. des Antiquites Grecques/Romaines, Paris).

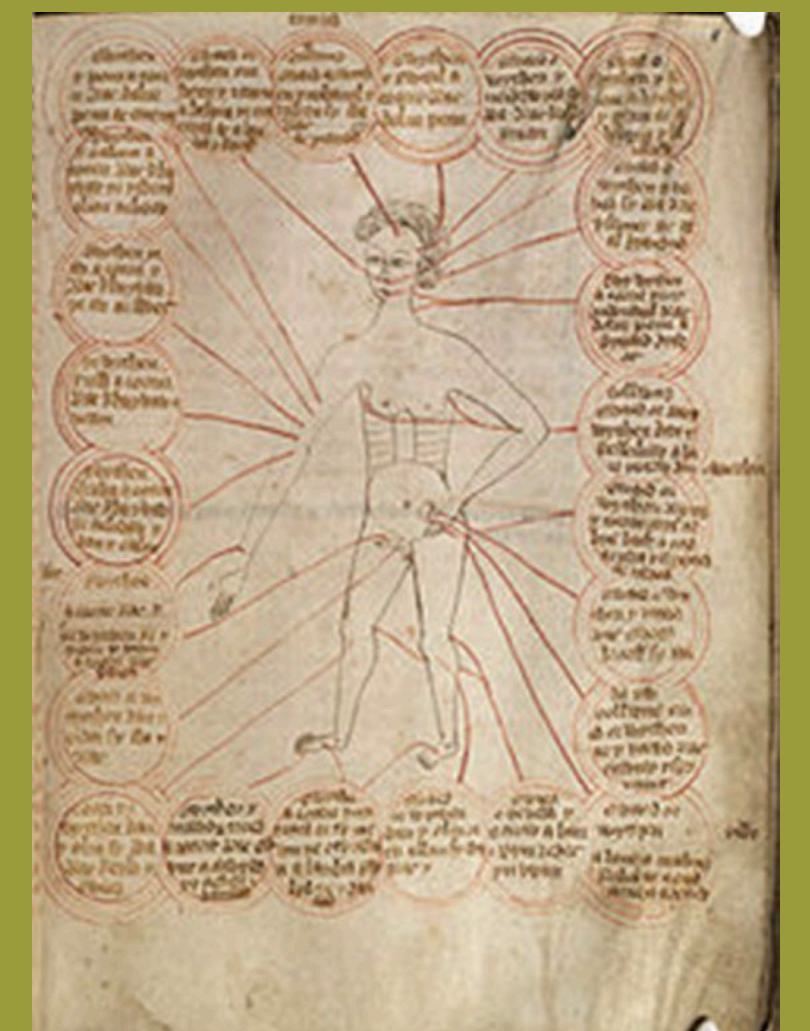


A fleam is represented in several coat of arms; for example, here in that for the Royal Air Force Institute of Pathology and Tropical Medicine.

Phlebotomy

Phlebotomy is defined as "The act or practice of opening a vein for letting or drawing blood as a therapeutic or diagnostic measure; venesection; bleeding". The name is most likely derived from phlebotome: *phlebs*, Greek for vein, and *tome*, meaning to cut. Certain advances have made the process more patient friendly:

- 1844: Irish physician Francis Rynd invents hollow needle
- 1853: French orthopaedic surgeon Charles Gabriel Pravaz invents silver syringe, which holds 1 mL fluid.
- 1853: Scottish physician Alexander Wood invents hypodermic syringe and needle
- 1869: Luer invents first all-glass syringe that can be sterilised.



A chart showing the parts of the body to be bled for different diseases (c. 1310–20).

**Blood Lines:
A Resource Not To
Be Taken In Vein**

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